

CLAIMS

1. A game system which generates an image, comprising:  
means which sets image information of an original image  
5 as an index number in a lookup table for index color  
texture-mapping; and  
means which transforms the image information of the  
original image by performing index color texture-mapping on a  
virtual object by using the lookup table in which the image  
10 information of the original image is set as the index number.
2. The game system as defined in claim 1,  
wherein the virtual object is a polygon having a size  
equal to a size of a display screen.
3. The game system as defined in claim 1,  
wherein the virtual object is a polygon having a size  
equal to a size of a block obtained by dividing a display screen  
into blocks.
- 20 4. The game system as defined in claim 1,  
wherein the lookup table is used to perform gamma  
correction, negative/positive inversion, posterization,  
solarization, binarization, monotone filtering or sepia  
25 filtering on the image information of the original image.
5. The game system as defined in claim 1,

wherein one of color components of color information in the image information of the original image is set as the index number in the lookup table for the transformation of the color information; and

5 wherein the game system further comprises means which performs masking on other color components of the transformed color information to avoid being drawn in the drawing region.

6. The game system as defined in claim 1, further comprising  
10 means which blends:

transformed color information obtained by setting the K-th color component of the color information in the image information of the original image as the index number in the lookup table;

15 transformed color information obtained by setting the L-th color component of the color information as the index number in the lookup table; and

transformed color information obtained by setting the M-th color component of the color information as the index  
20 number in the lookup table.

7. The game system as defined in claim 1,

wherein an alpha value corresponding to the image information of the original image is generated by the  
25 transformation of the image information of the original image.

8. The game system as defined in claim 1,

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wherein a depth value in the image information of the original image is set as the index number in the lookup table.

9. A game system which generates an image, comprising:

5 means which sets a depth value of each pixel of an original image as an index number in a lookup table for index color texture-mapping;

10 means which sets an alpha value of each pixel to a value corresponding to the depth value of each pixel of the original image by performing index color texture-mapping on a virtual object by using the lookup table in which the depth value of each pixel of the original image is set as the index number; and

15 means which blends the original image with a defocused image of the original image based on the alpha value of each pixel.

10. The game system as defined in claim 9,

20 wherein the depth value of each pixel of the original image is transformed into a second depth value formed of lower bits I to J which are positioned lower than the most significant bit of the depth value; and

wherein the second depth value is set as the index number in the lookup table for index color texture-mapping.

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11. The game system as defined in claim 10,

wherein the second depth value is clamped into a given

value depending on a bit value other than the bits I to J in the depth value.

12. The game system as defined in claim 10,

wherein the depth value is set as an index number in a lookup table for index color texture-mapping; and

wherein the depth value is transformed into the second depth value by performing index color texture-mapping on a virtual object by using the lookup table.

13. The game system as defined in claim 10, wherein:

bits M to N in the depth value are set as an index number in a first lookup table for index color texture-mapping;

the depth value is transformed into a third depth value by performing index color texture-mapping on a virtual object by using the first lookup table;

bits K to L (where  $K \geq I \geq L > M \geq J \geq N$ ) in the depth value are set as an index number in a second lookup table for index color texture-mapping;

the depth value is transformed into a fourth depth value by performing index color texture-mapping on a virtual object by using the second lookup table; and

the third and fourth depth values are used to determine the second depth value.

14. The game system as defined in claim 9,

wherein the defocused image of the original image is

generated by setting the original image as a texture and shifting texture coordinates of a virtual object when the texture is mapped onto the virtual object by texel interpolation method.

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15. The game system as defined in claim 9,  
wherein the virtual object is a polygon having a size equal to a size of a display screen.

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16. The game system as defined in claim 9,  
wherein the virtual object is a polygon having a size equal to a size of a block obtained by dividing a display screen into blocks.

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17. A game system which generates a game image for a domestic game, comprising:

means which sets an adjustment data for adjusting display properties of a monitor based on operational data inputted by a player through a game controller;

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save means which saves the set adjustment data in a saved information storage device for storing personal data of the player; and

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means which performs transformation processing on image information of an original image based on the adjustment data obtained by adjusting the display properties or loaded from the saved information storage device.

18. The game system as defined in claim 17,

wherein data of a control point of a free-form curve representing transformation properties of the image information is saved in the saved information storage device as the adjustment data by the save means.

19. A computer-usable program embodied on an information storage medium or in a carrier wave, the program comprising a processing routine for a computer to realize:

means which sets image information of an original image as an index number in a lookup table for index color texture-mapping; and

means which transforms the image information of the original image by performing index color texture-mapping on a virtual object by using the lookup table in which the image information of the original image is set as the index number.

20. The program as defined in claim 19,

wherein the virtual object is a polygon having a size equal to a size of a display screen.

21. The program as defined in claim 19,

wherein the virtual object is a polygon having a size equal to a size of a block obtained by dividing a display screen into blocks.

22. The program as defined in claim 19.

wherein the lookup table is used to perform gamma correction, negative/positive inversion, posterization, solarization, binarization, monotone filtering or sepia filtering on the image information of the original image.

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23. The program as defined in claim 19,

wherein one of color components of color information in the image information of the original image is set as the index number in the lookup table for the transformation of the color information; and

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wherein the program further comprises a processing routine for a computer to realize means which performs masking on other color components of the transformed color information to avoid being drawn in the drawing region.

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24. The program as defined in claim 19, further comprising processing routine for a computer to realize means which blends:

transformed color information obtained by setting the K-th color component of the color information in the image information of the original image as the index number in the lookup table;

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transformed color information obtained by setting the L-th color component of the color information as the index number in the lookup table; and

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transformed color information obtained by setting the M-th color component of the color information as the index number in the lookup table.

25 The program as defined in claim 19,  
wherein an alpha value corresponding to the image  
information of the original image is generated by the  
transformation of the image information of the original image.

26. The program as defined in claim 19,  
wherein a depth value in the image information of the  
original image is set as the index number in the lookup table.

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27. A computer-usable program embodied on an information  
storage medium or in a carrier wave, the program comprising a  
processing routine for a computer to realize:

15 means which sets a depth value of each pixel of an  
original image as an index number in a lookup table for index  
color texture-mapping;

20 means which sets an alpha value of each pixel to a value  
corresponding to the depth value of each pixel of the original  
image by performing index color texture-mapping on a virtual  
object by using the lookup table in which the depth value of  
each pixel of the original image is set as the index number;  
and

25 means which blends the original image with a defocused  
image of the original image based on the alpha value of each  
pixel.

28. The program as defined in claim 27.



wherein the depth value of each pixel of the original image is transformed into a second depth value formed of lower bits I to J which are positioned lower than the most significant bit of the depth value; and

5        wherein the second depth value is set as the index number in the lookup table for index color texture-mapping.

29.     The program as defined in claim 28,  
         wherein the second depth value is clamped into a given  
10    value depending on a bit value other than the bits I to J in the depth value.

30.     The program as defined in claim 28,  
         wherein the depth value is set as an index number in a  
15    lookup table for index color texture-mapping; and  
         wherein the depth value is transformed into the second depth value by performing index color texture-mapping on a virtual object by using the lookup table.

20    31.     The program as defined in claim 28, wherein:  
         bits M to N in the depth value are set as an index number in a first lookup table for index color texture-mapping;  
         the depth value is transformed into a third depth value by performing index color texture-mapping on a virtual object  
25    by using the first lookup table;

         bits K to L (where  $K \geq I \geq L > M \geq J \geq N$ ) in the depth value are set as an index number in a second lookup table for

index color texture-mapping;

the depth value is transformed into a fourth depth value by performing index color texture-mapping on a virtual object by using the second lookup table; and

5 the third and fourth depth values are used to determine the second depth value.

32. The program as defined in claim 27,

10 wherein the defocused image of the original image is generated by setting the original image as a texture and shifting texture coordinates of a virtual object when the texture is mapped onto the virtual object by texel interpolation method.

15 33. The program as defined in claim 27,

wherein the virtual object is a polygon having a size equal to a size of a display screen.

34. The program as defined in claim 27,

20 wherein the virtual object is a polygon having a size equal to a size of a block obtained by dividing a display screen into blocks.

35. A computer-usable program embodied on an information  
25 storage medium or in a carrier wave for generating a game image for a domestic game, the program comprising a processing routine for a computer to realize:

means which sets an adjustment data for adjusting the display properties of a monitor based on operational data inputted by a player through a game controller;

save means which saves the set adjustment data in a saved  
5 information storage device for storing personal data of the player; and

means which performs transformation processing on image information of an original image based on the adjustment data obtained by adjusting the display properties or loaded from the  
10 saved information storage device.

36. The program as defined in claim 35,

wherein data of a control point of a free-form curve representing transformation properties of the image  
15 information is saved in the saved information storage device as the adjustment data by the save means.

37. A method of generating an image, comprising a step of:  
setting image information of an original image as an  
20 index number in a lookup table for index color texture-mapping;  
and

transforming the image information of the original image  
by performing index color texture-mapping on a virtual object  
by using the lookup table in which the image information of the  
25 original image is set as the index number.

38. The method as defined in claim 37,

wherein the virtual object is a polygon having a size equal to a size of a display screen.

39. The method as defined in claim 37.

5 wherein the virtual object is a polygon having a size equal to a size of a block obtained by dividing a display screen into blocks.

40. The method as defined in claim 37.

10 wherein the lookup table is used to perform gamma correction, negative/positive inversion, posterization, solarization, binarization, monotone filtering or sepia filtering on the image information of the original image.

41. The method as defined in claim 37,

15 wherein one of color components of color information in the image information of the original image is set as an index number in the lookup table for the transformation of the color information; and

20 wherein masking is performed on other color components of the transformed color information to avoid being drawn in the drawing region.

42. The method as defined in claim 37, further comprising  
25 a step of blending:

transformed color information obtained by setting the K-th color component of the color information in the image

information of the original image as the index number in the lookup table;

transformed color information obtained by setting the L-th color component of the color information as the index number in the lookup table; and

transformed color information obtained by setting the M-th color component of the color information as the index number in the lookup table.

43. The method as defined in claim 37,

wherein an alpha value corresponding to the image information of the original image is generated by the transformation of the image information of the original image.

44. The method as defined in claim 37,

wherein a depth value in the image information of the original image is set as the index number in the lookup table.

45. A method of generating an image, comprising a step of:  
setting a depth value of each pixel of an original image as an index number in a lookup table for index color texture-mapping;

setting an alpha value of each pixel to a value corresponding to the depth value of each pixel of the original image by performing index color texture-mapping on a virtual object by using the lookup table in which the depth value of each pixel of the original image is set as the index number;

and

blending the original image with a defocused image of the original image based on the alpha value of each pixel.

5 46. The method as defined in claim 45,

wherein the depth value of each pixel of the original image is transformed into a second depth value formed of lower bits I to J which are positioned lower than the most significant bit of the depth value; and

10 wherein the second depth value is set as the index number in the lookup table for index color texture-mapping.

47. The method as defined in claim 46,

15 wherein the second depth value is clamped into a given value depending on a bit value other than the bits I to J in the depth value.

48. The method as defined in claim 46,

20 wherein the depth value is set as an index number in a lookup table for index color texture-mapping; and

wherein the depth value is transformed into the second depth value by performing index color texture-mapping on a virtual object by using the lookup table.

25 49. The method as defined in claim 46, wherein:

bits M to N in the depth value are set as an index number in a first lookup table for index color texture-mapping;

the depth value is transformed into a third depth value by performing index color texture-mapping on a virtual object by using the first lookup table;

bits  $K$  to  $L$  (where  $K \geq I \geq L > M \geq J \geq N$ ) in the depth  
5 value are set as an index number in a second lookup table for index color texture-mapping;

the depth value is transformed into a fourth depth value by performing index color texture-mapping on a virtual object by using the second lookup table; and

10 the third and fourth depth values are used to determine the second depth value.

50. The method as defined in claim 45,

wherein the defocused image of the original image is  
15 generated by setting the original image as a texture and shifting texture coordinates of a virtual object when the texture is mapped onto the virtual object by texel interpolation method.

20 51. The method as defined in claim 45,

wherein the virtual object is a polygon having a size equal to a size of a display screen.

52. The method as defined in claim 45,

25 wherein the virtual object is a polygon having a size equal to a size of a block obtained by dividing a display screen into blocks.

53. A method of generating a game image for a domestic game,  
comprising a step of:

5 setting an adjustment data for adjusting display  
properties of a monitor based on operational data inputted by  
a player through a game controller;

saving the set adjustment data in a saved information  
storage device for storing personal data of the player; and

10 performing transformation processing on image  
information of an original image based on the adjustment data  
obtained by adjusting the display properties or loaded from the  
saved information storage device.

54. The method as defined in claim 53,

15 wherein data of a control point of a free-form curve  
representing transformation properties of the image  
information is saved in the saved information storage device  
as the adjustment data.

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